Curriculum Vitae Marten Smidt

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Contents

1 Personal details

Name Marten Piet Smidt, PhD

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2 Education

- Higher Laboratory Education: September 1981-August, 1984, Main subject :Medical Microbiology
- Biology, University of Groningen: September 1986- March 1991, Main Subject :Biochemistry/Microbial-Physiology
- Doctorate at University of Groningen: June 1991- May 1996, Title of thesis :Two DNA-binding proteins recognizing the apo-VLDL-II gene cis-regulatory element D.
- BKO (2012) degree for education
- SKO (2016) degree for advanced education skills

3 Civil service

- 1984-1986: Staff member in the division hospital in the Seedorf Facility, Germany

4 Professional experience

- 1986: Technician at the special blood bank facility as part of "Eurotransplant", Academic Hospital Groningen, The Netherlands
- 1991-1995: PhD in the group of Dr. Geert AB: Analysis of the involvement of liver specific or enriched transcription factors on the liver specific and estradiol inducible apoVLDL II gene, University of Groningen, The Netherlands.
- 1995-1999: Postdoc at the Rudolf Magnus Institute for Neuroscience in the lab of Prof Dr. J.P.H. Burbach: Study of brain development in relation to mental disorders and cloning of specific transcription factors which are involved in that process, University of Utrecht, The Netherlands.
- 2000- 2006: Assistant professor at the Department of Neuroscience and Pharmacology, Rudolf Magnus Institute of Neuroscience, University Medical Center, Utrecht, The Netherlands.
- 2001-2011: Team leader of the midbrain dopaminergic system research team at the Department of Neuroscience and Pharmacology, Rudolf Magnus Institute of Neuroscience, University Medical Center, Utrecht, The Netherlands.
- 2002-2011: Coordinator Section Developmental Neuroscience of the Rudolf Magnus Institute of Neuroscience, University Medical Center, Utrecht, The Netherlands
- 2006-2009: Associate professor in the department Neuroscience and Pharmacology, University Medical Center, Utrecht, The Netherlands.
- 2008-2011: Head of the research platform Neurodevelopment, department Neuroscience and Pharmacology, University Medical Center, Utrecht, The Netherlands.
- 2009-2011: Full Professor, chair: Developmental Neurobiology, department Neuroscience and Pharmacology, University Medical Center, Utrecht, The Netherlands.
- 2011-present: Full Professor, Molecular Neuroscience, Center for Neuroscience, Swammerdam Institute for Life Sciences, University of Amsterdam, Amsterdam, The Netherlands

- 2015-2021: Director of the Swammerdam Institute for Life Sciences (SILS), University of Amsterdam, Amsterdam, The Netherlands.
- 2017-present: Founder/CEO of a drug development company: Macrobian Biotech BV with co-founder dr. L.P. van der Heide, Amsterdam, The Netherlands.
- 2021 - 2022: Member managment team of the Swammerdam Institute for Life Sciences (SILS), University of Amsterdam, Amsterdam, The Netherlands.
- 2022- present: (co-) Director of the Amsterdam Neuroscience research institute, A-UMC, Amsterdam, The Netherlands

5 Professional activities

5.1 Grant support

1. 1998-2001: National Parkinson Foundation Research Grant: Involvement of the homeobox gene Pitx3 in development and maintenance of mesDA neurons. (PI)
2. 1999-2001: NWO-MW Fellowship: The role of the novel homeodomain Pitx3 in molecular cascades of development and maintenance of the mesencephalic dopaminergic system. (PI)
3. 1999-2002: Korczak Foundation Fellowship: Molecular processes in brain development, Postdoc 3 years. (PI) (With co-PI JPH burbach)
4. 2000-2004: Korczak Foundation Project: Molecular processes in brain development, PhD 4 years, (PI) (With co-PI JPH burbach)
5. 1999-2001: Industrial project with Solvay Pharmaceuticals: Pitx3 function and development of model systems with disturbed mesencephalic dopamine systems . Postdoc (PI) (With co-PI JPH burbach)
6. 2000-2002: NWO-MW grant: Genetic and epigenetic control of mesencephalic dopamine system development, Framework of scientific cooperation between The Netherlands and the Russian Federation. (PI with co-PI WH Gispen)
7. 2003-2007: NWO-ALW grant: The Pitx3 homeobox gene cascade and dysfunction of the midbrain dopamine system. (PI) (with co-PI JPH burbach)
8. 2004-2009: Hypotential program of the University of Utrecht: BAMI: Brain Analysis through Molecular Imaging (PI) (With co-PI Freek Beekman)
9. 2004: Brain Foundation in The Netherlands (Hersenstichting Nederland) research grant. (PI)
10. 2006-2010: NWO-ALW research grant: Identification of Pitx3 regulated genes in midbrain dopamine neurons (PI)
11. 2007-2011: TI-Farma initiative, The Netherlands: 2 PhD and 1 PD position (PI with co PI J Pasterkamp and JPH Burbach))
12. 2007: Brain Foundation in The Netherlands (Hersenstichting Nederland) research grant. (PI)
13. 2009-2012: FP7 EU-grant proposal/project, medium sized EU-research project (coordinator and PI)
14. 2009-2014: NWO-ALW VICI grant (PI)
15. 2009-2013: NWO-ALW program grant (PI)
16. 1009: ZonMw (NWO) ZonMw-networkgrant (for FP-7 meeting).
17. 2012-2013: 4* publication grants (NWO) open acces publications.
18. MRA-cluster grant “Impact” 2013-2015. (co-PI with “Innoser” (company)).
19. 2015-2017: Host to the Marie Curie fellowship of Dr. F. Jacobs (2015-2017).
20. 2016-2020: Research grant from the dutch Parkinson Foundation (PI: Dr. J.P. van de Heide).
21. 2017: Research grant from the “Dorpmans-Wigmans Stichting” (with co-PI Lars vd Heide, 58kEuro equipment).
22. 2017: Proof of concept grant (PI; 100kEuro)

23. 2017: Valorisation grant from FNWI-UvA for the spin-off company Macrobian-Biotech (PI, founder; 230 kEuro).
24. 2017: Matching funds from UvA holding for the spin-off company Macrobian-Biotech (PI, founder; 500 kEuro).
25. 2017: NWO-TTW, Take off Phase 1, Towards the identification of a novel compound to treat Parkinson's disease (PI, 40 kEuro).
26. 2019: Proof of concept grant (PI; 235kEuro).
27. 2020: Proof of concept grant (PI; 300 kEuro (milestone based 100 kEuro each year for 3 years)).
28. 2020: Pitt Hopkins UK research grant (PI; 70 kEuro)
29. 2020: Pitt Hopkins NL research grant (PI; 20 kEuro)
30. 2020: Zeldzame ziekten fonds (PI, 52 kEuro toegezegd in werving activiteiten door het fonds)
31. 2021: Research grant from the dutch Parkinson Foundation (250 kEuro, coPI with main PI: Dr. L.P. van der Heide).
32. 2022: Proof of concept grant (PI; 100 kEuro).
33. 2023: National growthfund program "holomicrobioom" (www.holomicrobioom.nl) , granted a reservation of 200 million Euro (coordinator/PI, application through the dutch ministry of agriculture)

5.2 Reviewing/editorial activities

- Reviewer for Science, Trend in Cell Science, Journal of Neurochemistry, Neuroscience, European Journal of Neuroscience, European Journal of Pharmacology, Journal of Biochemistry, Gene, Pharmacology Biochemistry and Behavior, Cell, Trends in Pharmacological sciences, PNAS, Frontier journals and Development.
- Grant reviewer for the Netherlands and Israel organizations for scientific research.
- Member of the grant evaluation board of NWO-ALW(2005-2009).
- Member of the NWO-ALW-VENI committee (2007-2010).
- Member of the NWO-Life Sciences domein panel (2009 and 2010).
- Member of the expert committee for the 2010 Marie Curie Individual fellowships evaluation LIFE Panel. EU, Brussels (2010, 2011).
- French National Research Agency (ANR) reviewing.
- Member of the Reviewing board of Frontiers in Neuroanatomy (2008-current).
- Editorial Board Member of Stem Cell Review Letters (2009-present).
- Member of the NWO-domain (ALW/ENW)grant evaluation board (2009-2017).
- French National Research Agency (ANR) non-thematic programme reviewing (Neuroscience, 2010-current).
- Editorial Board member of ISRN Developmental Biology (2012-current).
- EU Marie Curie program Evaluation (2010-2019).
- Member of the NWO-ALW-VIDI board (2011-2014 (chair)).
- Member of the VICI grant evaluation board of NWO (2018-2020).
- Referee for Donders Institute PhD project competition (2018).
- Reviewer for the HFSP program (2021-)

5.3 Brief summary of research

My main interest is molecular programming during development of the central nervous system. Since at that time almost nothing was known on the subject, I started on a cloning effort to identify transcription factors that play a role during CNS development. From this work three major breakthroughs were established:

1. The cloning, identification and characterization of the homeobox gene Pitx3 (publication 109). This gene was found to be exclusively expressed in the substantia nigra (SNc) and ventral tegmental area (VTA) forming the midbrain dopamine system, essential for mood and movement regulation in mammals. The real impact of the work was that this factor is exclusively expressed in these neurons and this formed the first step in the understanding of molecular programming of midbrain dopamine neurons.

2. The identification of the role of the orphan nuclear hormone receptor Nurr1 (publication 108). It was shown by us and others that Nurr1 is essential for the development of fully differentiated midbrain dopamine neurons. This was the second factor identified to be involved in midbrain dopamine neurodevelopment.

3. The identification of Lmx1b (publication 105). We showed that the early specification of the midbrain by Lmx1b is essential for the formation of midbrain dopaminergic neurons. Moreover, we showed that TH expression was possible in early DA neurons without the expression of Pitx3, indicating that Pitx3 might be involved in molecular processes other than transmitter phenotype.

After this cloning and descriptive phase I was interested to go into depth into the role of Pitx3 (as an NWO fellow) in the neurodevelopment of midbrain dopamine neurons and to broaden my view on molecular signaling events in neuronal cells. This was accomplished by the start of analysis of the Pitx3 knock out and by the start of a new research line on forkhead proteins (FoxO). The work lead to two major findings:

1. The data from the Pitx3 knock-out analysis (aphakia mouse) formed a new chapter in the understanding of the role of Pitx3 in the development of midbrain dopamine neurons (publication 92). We showed that Pitx3 is essential for the formation of the SNc and the ventral part of the VTA. Moreover it was clear from the analysis that the defect was apparent at the early stage of terminal differentiation, Most importantly, the defect was not present in all midbrain dopamine neurons but mainly in the ventral medial SNc and ventral VTA.

2. The cloning and functional characterization of FoxO6, a novel member of the FoxO family (FoxO1, FoxO3 and FoxO4). We showed that FoxO6 had unique properties in terms of nucleo-cytoplasmic shuttling, as a result of PKB signaling, compared to its family members (publication 98). Later we showed the mechanism of the altered shuttling behavior and showed that phosphorylation by PKB does inactivate FoxO6 by inhibiting DNA interaction without the extra level of inhibition of nuclear removal (publication 85). We have gained quickly a good position by this work. A review from our team received much enthusiasm as highlighted by 82 citations so-far and the 25th place of most downloaded papers in the publication year (publication 91).

The fact that a subset of the complete group of dopamine neurons was affected in the Pitx3 knock-out (Pitx3 itself is expressed in all midbrain dopamine cells) initiated the novel idea that the molecular coding of the SNc and VTA is not the same. A real step forward was made by the identification of subset specific markers and coding differences in the ventricular zone. This concept of subset specification was a crucial step in the way the field regarded the molecular pathways leading to the development of dopamine neurons of the SNc and VTA (publication 76). In addition, it became clear that the neurons populating the SNc and VTA are not generated exclusively in the midbrain but also in the diencephalon. Therefore, the name of this neuronal group was changed to mesodiencephalic dopaminergic (mdDA) neurons and has been used as such from that point on.

This was a crucial moment in my career, i established my own group and my work clearly surpassed the initial identification and function-description of transcription factors involved in the development of mdDA neurons. My interest went into two additionally research directions:

1. The live visualization of dopamine neurotransmission through multi-pinhole SPECT. Prof dr. Freek Beekman designed a spectacular micro-SPECT system to follow tracers in the mouse brain with a resolution of 0.3 mm. Together we started to image live dopamine transmitter events in a living mouse. This work has lead to two high impact publications (publication: 84 and 63).

2. Understand how subset specification is established, which subsets exist and what the relationship is between subset and specific connectivity. A crucial finding in the understanding of subsets specific molecular coding was established through the identification of a subset specific transcriptional target of Pitx3. This gene, (retinal) aldehyde dehydrogenase 2 (Ahd2, Raldh1) is expressed, in the adult brain, in the ventral cells of the SNc and VTA, the neurons that are lost in the Pitx3 mutant (publication 65). A second novel finding was that retinoic acid (RA) has a role in terminal differentiation of this specific set of neurons in addition to its role in the ventricular zone. Ahd2 is present in ventricular zone cells, its transcription is terminated when cells leave the ventricular zone and under the control of Pitx3, Ahd2 is transcribed again in a (lateral) subset of mdDA neurons and is essential for the synthesis

of RA out of retinal. We were able to show the dependence of mdDA differentiation for RA signalling by rescuing the Pitx3 knock-out phenotype through the exogenous application of RA.

Although I am still working on- and interested in the FoxO6 knock out (we have generated ko animals) my main interest lies with the molecular programming of mdDA neuronal subsets. My lab is currently investigating 1) why Ahd2 activation is only happening in the described subset; 2) we are mapping transcriptional targets of Engrailed, Lmx1a/b, and Nurr1 to get a better idea about the molecular programming that is initiated within mdDA neurons; 3) the functional interaction between Pitx3/Nurr1 (publication 60) and En1 and 4) we are finalizing the identification of adult subset specific markers. At that moment my research group consist of 4 PhD students, 3 postdocs, 2 technicians, one eu-program manager and every year about 3 master students.

The work described above has been very fruit-full and has lead to a leading position of my research group mainly in the field of development and engineering of mdDA neurons, marked by many invitations to write reviews/books on the topic, the high amount/level of peer-reviewed publications and the invitations to speak at the international level about my work.

In the summer of 2011, i decided to move the work-group to the Swammerdam Institute for Life Sciences at the University of Amsterdam and started the "Molecular Neuroscience" section. I have new opportunities to build further on the scientific output and have more funding/equipment available to perform cutting edge work in the direction of molecular programming of neuronal systems.

The molecular Neuroscience team has expanded and the following research lines are now active: Molecular mechanisms in midbrain development: Prof. Dr. M.P. Smidt; Signal transduction in the developing and adult midbrain: Prof. Dr. M.P. Smidt and Dr. L.P. van der Heide; Insulin signaling and circadian rhythms in the developing and adult brain: Prof. Dr. M.P. Smidt and Dr. M.F.M. Hoekman; Functional development of cortical microcircuits: Dr. J.A. van Hooft (until 2017); Primate Genome Evolution and Human Brain Development: Dr. F.M.J. Jacobs. Our scientific endeavors have precipitated in the UvA education program where we developed a education-line towards molecular neuroscience and generated a master program of the same name.

Next to these activities I have been appointed Director (2015) of the Swammerdam Institute for Life Sciences (SILS; 250 fte) of the University of Amsterdam.

In 2017 I have founded a biotechnology company: Macrobian Biotech BV (www.macrobian-biotech.com), together with co-founder Dr. Lars van der Heide and supported by UvA ventures BV. Within this UvA-spin-off we develop novel medication towards the modulation of dopaminergic function, as for example for the treatment of Parkinson's disease. Macrobian Biotech is a pre-clinical drug development company aimed to produce proof-of-concept and runs until stage1-2 of clinical trials.

5.4 Trainees

5.4.1 PhD students:

1. 1997-2001: Ceriel Asbreuk: "Cloning and characterization of neurohypophysial transcription factors involved in development and function of the hypothalamo/hypophysial axis."
2. 1998-2002: Marjan Kromkamp: "Expression patterns of genes involved in brain development and human brain disorders".
3. 2000-2004: Simone Smits: Analysis of Pitx3 mutants.
4. 2000-2004: Lars van der Heide: PKB Signaling in the developing and adult nervous system
5. 2001-2005: Patrick Wijchers: Cloning of Forkhead genes related to midbrain development and function.
6. 2003-2007: Koen Hornman: Development and function of the mesDA system, involvement of Pitx3.
7. 2004-2008: Frank Jacobs: Identification of target genes of the homeodomain gene Pitx3.
8. 2007-2011: Teresa Alves Dos Santos: Identification of Pitx3 regulated genes in midbrain dopamine neurons
9. 2007-2012: Elisa Hoekstra: Molecular coding of mdDA neurons during development
10. 2009-2010: Kerstin Iffland: Role of RA through DLK1 signalling in the development of mdDA neurons (left the lab after 1 year).
11. 2009-2013: Jesse Veenvliet, The role of RA signalling in subset specification of mdDA neurons.
12. 2011-2015: Ricardo Paap, Cortical development, the role of FoxO6 in stem cell maintenace.
13. 2011-2015: Simone Mesman, Ventricular zone coding of the mesodiencephalic area

14. 2011-2015: Willemieke Kouwenhoven, Crosstalk between En1, Pitx3 and Nurr1 in development of mdDA neurons
15. 2013-2017: Iris Wever, Epigentic influence of Lim homeodomain proteins in neuronal specification of mdDA neurons.
16. 2013-2017: Erik van Heesbeen, Epigenetic mechanisms in neuronal specification and differentiation.
17. 2014-2018: Gerrald Lodewijk, PhD 2021
18. 2015-2019: Nina Haring, PhD 2020
19. 20167-2021: Eddie Robinson, Mcl1 in control of life and death of dopamine neurons, PhD 2021
20. 2017-2021: Swip Draaier, Role of FoxO6 in stem cell maintenance and cortical development
21. 2018-2022: Jesse Stoop, modulation of TH production in midbrian DA neurons
22. 2018-20222: Erik Douma, modulation of TH production in midbrian DA neurons
23. 2020-2024: Reinofke de Vis, Mcl1 in the regulation of celdeath in dopamine neurons
24. 2020-2024: Luis Alves, Role of TCF in cortical and medulla development.
25. 2021-2025: Matthijs Lingl, Role of H3K79 methylation in development and aging in neuronal systems.

5.4.2 Promoter:

1. Co-promoter of Ceriel Asbreuk (PhD in 2002).
2. Co-promoter of Marjan Kromkamp (PhD in 2002).
3. Co-promoter of Lars van de Heide (PhD in 2004).
4. Co-promoter of Simone Smits (PhD in 2005)
5. Co-promoter of Patrick Wijchers (PhD in 2005).
6. Co-promoter of Frank Jacobs (PhD in 2009).
7. Promoter of Teresa Alvers dossantos (PhD in 2011).
8. Promoter of Elisa Hoekstra (PhD in 2012).
9. Promoter of Jesse Veenvliet (PhD in 2014)
10. Promoter of Willemieke Kouwenhoven (PhD in 2016)
11. Promoter of Ricardo Paap (PhD in 2017)
12. Promoter of Simone Mesman (PhD in 2016)
13. Promoter of Iris Wever (PhD in 2018)
14. Promoter of Erik van Heesbeen (PhD in 2021)
15. Promoter of Gerald Lodewijk (PhD in 2021)
16. Promoter of Nina Haring (PhD in 2020)
17. Promoter of Eddie J Robinson (PhD in 2021)
18. Promoter of Swip Draaier (PhD in 2022)
19. Promoter of Elise van Bree (PhD 2022)
20. Promoter of Jesse Stoop (PhD in 2023)
21. Promoter of Grace Farmiloe (PhD 2023)
22. Promoter of Erik Douma (PhD in 2024)
23. Promoter of Luis Baiona Alves (PhD 2025)
24. Promoter of Reinofke van de Vis (PhD in 2025)
25. Promotor of Tanne van der Wal (2024)
26. Promoter of Matthijs Lingl (PhD in 2025)

5.4.3 Master Students:

1. 1998-1999: Kyra Campbell: Cloning of Xenopus Pitx3.
2. 1999-2000: Leontien Spierings: Analysis of Pitx3 protein in Human SNc in healthy controls and Parkinsonian brain.; Erik Baaijens: Analysis of new markers in the mesDA system; Max Custers: Provision of cRNA probes for ISH analysis of mesDA markers.
3. 2001-2002: Frank Jacobs: Cloning of homeodomain and forkhead genes from the mesDA systems.; Wiebe Hielkema: Recombinant protein production/purification and generation of antibodies.; Suzanne van der Nobelen: Subtraction library screening of wt and AK mesDA tissue.: Koen Hornman: Generation of a TH-Pitx3 knock-in construct.
4. 2004: Rolf Meijer: analyzing the molecular code on developing midbrain dopaminergic neurons; Joris van Arnsbergen: Analyzing signaling cascades in midbrain dopaminergic neurons; Marijke de Backer: mGluR distribution in the developing and adult mouse brain.
5. 2005/2006: Joanna Korecka, Hanneke Verstegen
6. 2007: Susan van Erp, Mark Mizee, Thomas Gora.
7. 2008: Louk van der Kallen, Willem de Munnik, Jesse Veenvliet.
8. 2009: Diewertje Bink, Gerard Scheppink.
9. 2010; Simone Mesman, Ricardo Paap, Roel Neijts
10. 2011; Roel Neijts, Iris Wever; Cindy Wagemans
11. 2012-current; My team harbors 10-15 master students every year, next to max. 5 bachelor students

5.4.4 Other trainees

1. 1997-1999: Dr. Pilar Cazorla: "Characterisation of the novel homeodomain gene Pitx3".
2. 1997-1998: Prof. Dr. Michael Selmanoff : "Cloning of novel homeodomain genes involved in the development and function of the hypothalamus".
3. 2004-2007: Dr. Simone Smits: Development of the mesDA system.
4. 2005-2007: Dr. Cornelle Noorlander: The role of prenatal antidepressant use for the setting of the serotonin system.
5. 2008-2011: Dr. Koushik Chakrabarty: Gene profiling of early developmental events in mesodiencephalic dopaminergic neurons.
6. 2009-2010: Dr. Evelyn Groot, Early dopaminergic subset specification on the mesodiencephalic-ventricular zone.
7. 2009-2012: Dr. Wadia Almirza, Unraveling the key players in RA signaling during mdDA neurodevelopment.
8. 2011-2013: Dr. E. Hoekstra, Role of Lmx1a and Lmx1b in mdDA neuronal specification.
9. 2011-2013: Dr. L. van der Heide, TGF-beta signalling in mdDA neurons.
10. 2018-2020: Dr. S. Mesman, transcriptional coding of neuronal development.

5.5 Selection of invited lectures

1. March 5, 1999: Molecular cascades in development of the mesDA system; Invited by Andreas Hartmann, INSERM, Paris, France
2. March 19, 1999: Cloning and analysis of homeobox genes in CNS development; Invited by Dr. M. Linskens, University of Groningen, The Netherlands
3. May 19, 1999: Homeodomain transcription factors and MesDA development; Invited by Joost Verhagen, Netherlands Brain Institute, Amsterdam, The Netherlands
4. December 10, 1999: Molecular cascades in mesDA development and function; Invited by Dr. Jochem Graw, Max Plank Institute, Munich, Germany
5. April 6-9, 2000: Molecular cascades in mesDA development and function; Invited by: Professor K.V. Sudakov, Russian Academy of Medical Sciences, P.K. Anokhin Institute of Normal Physiology, Moscow, Russia.

6. November 24, 2000: New directions in the development and function of the mesencephalic dopaminergic system; Invited by: Dr. Bert Joosten, Department of Neurology, University Medical Center, Utrecht, The Netherlands

7. June 9-14, 2002: Development of the substantia nigra pars compacta is depending on the homeodomain gene Pitx3; Invited by: The 2002 Dopamine Conference in Portland, Oregon, USA

8. January 31, 2003: Development of the substantia nigra pars compacta is depending on the homeodomain gene Pitx3; Invited by: Dutch Neuro Federation Research Class 2003

9. July 17, 2003: Development of the substantia nigra pars compacta is depending on the homeodomain gene Pitx3; Invited by: Dr. Horst Simon, Department of Anatomy and Cell Biology III, University of Heidelberg, Heidelberg, Germany.

10. November 8-12, 2003: Early developmental failure of substantia nigra dopamine neurons in mice lacking the homeodomain gene Pitx3; Invited by: The 2003 American Society of Neuroscience Meeting, New Orleans, USA

11. December 18, 2003: Early developmental failure of substantia nigra dopamine neurons in mice lacking the homeodomain gene Pitx3; Invited by: Dr. Silke Rinkwitz, University of Oldenburg, Oldenburg, Germany

12. May 27, 2004: The homeobox gene Pitx3 and its role in the development of dopamine neurons of the substantia nigra; Invited by: Prof. Dr. Luis Puelles, Department of Human Anatomy and Psychobiology, Faculty of Medicine, University of Murcia, Murcia, Spain.

13. June 6, 2005:The role of Pitx3 in survival of midbrain dopaminergic neurons; Invited by: The 16th International congress on Parkinson disease and related disorders, The world congress on Parkinson disease, Berlin, Germany

14. March, 8, 2006: Developmental origin and fate of meso-diencephalic dopamine neurons; Invited by Ronald van Kesteren, VU, Amsterdam The Netherlands

15. July 3, 2006:Origin and subset specification of mesodiencephalic dopaminergic neurons; Invited by: International Symposium entitled Development of Neurotransmitter Systems. The Collaborative Research Center - Sonderforschungsbereich 488 of the German Research Foundation - Molecular and Cellular Bases of Neural Development and the Interdisciplinary Center for Neuroscience (IZN) at Heidelberg University

16. May 30-June 2, 2007: Early development and neuronal specification of mesodiencephalic dopaminergic neurons; Invited by Thomas Perlmann for the symposium: 50 years of Dopamine, Stockholm, Sweden.

17. August 30-Sept 1, 2007: The role of Ahd2 in neuronal specification and maintenance of SNc neurons; Invited by Anders Bjorklund and Thomas Perlmann for the Nobel symposium: Development and Engineering of Dopamine Neurons: From Genes to Therapy, Stockholm, Sweden.

18. November 30-Dec 1, 2007: A Pitx3 regulatory network in development and maintenance of mesodiencephalic dopamine neurons. Invited by I. Dori and G. C. Papadopoulos for the symposium: brain: from cells to behavior, Tessaloniki, Greece.

19. January 22-27, 2008: Visiting professor, V International Course on Morphological Interpretation in Neuroembryology, Murcia Spain. Invited by Luis Puelles.

20. April 17, 2008: Vulnerability of dopaminergic neurons: a Pitx3 regulatory network, Heinrich-Heine-University, Duesseldorf , Germany.

21. June 4-6, 2008: Molecular programming of mesodiencephalic dopaminergic neurons, 2008 Dutch Endo-Neuro-Psycho meeting, Doorwerth, The Netherlands.

22. November 26, 2008: A Pitx3 induced gene regulatory network in the formation and maintenance of substantia nigra dopamine neurons, 2008 RMI symposium, Utrecht , The Netherlands.

23. Januari 7, 2009: A Pitx3 induced gene regulatory network in the formation and maintenance of substantia nigra dopamine neurons, Invited by Siew-lan Ang, MRC, London, UK

24. Februari 6, 2009: How to build the central nervous system, Emma Andersson, Karolinska Intitute, Stockholm, Sweden (Opponent of Thesis defence of Emma Andersson).

25. December 3, 2009: A Pitx3 regulated network in the differentiation program of mdDA neurons, FP7 "mdDAneurodev" consortium meeting, Utrecht, The Netherlands.

26. December 11, 2009: Subset specification in the mdDA neuronal population, Judith Homberg, University of Nijmegen, Nijmegen, The Netherlands.

27. May 6, 2010: A Pitx3 regulated network in the differentiation program of mdDA neurons, Thomas Perlmann, karolinska Intitute, Stockholm, Sweden.

28. June 17, 2010: Development of the vertebrate mesodiencephalic dopaminergic system, Stefano Gustincich, DOPAMINET consortium meeting, London, UK.

29. September 4, 2010: Retinoic acid dependent and independent Pitx3 driven mdDA neuronal differentiation, Ernest arenas, 8th international Stem cell School in regenerative medicin 2010, karolinska Intitute, Stockholm, Sweden.

30. April 15, 2011: A Pitx3 regulated network in the development of mdDA neurons, Alain Prochianz, Paris, France.

31. April 28-29, 2011: A Pitx3 regulated network in the development of mdDA neurons, Shared "Dopaminet" and "mdDAneurodev" FP7-meeting, Freiburg, Germany

32. June 17, 2011: A Pitx3 regulated network in the development of mdDA neurons, International Translational Neuroscience Conference, Kaunas, Lituania.

33. June 28, 2011: Retinoic acid dependent and independent Pitx3 driven mdDA neuronal differentiation, FEBS symposium, Torino, Italy.

34. November 11, 2011: A Pitx3 regulated network in the development of mdDA neurons., Sjef Copray, Molecular Medicin Seminars Series 2011, Groningen, The Netherlands.

35. Januari 27, 2012: A Pitx3 regulated network in the development of mdDA neurons., Tania Vitalis, Paris, France.

36. February 14, 2012: A Pitx3 mediated program of dopaminergic subset-specification., Eric Bellefroid, Bruxelles, Belgium.

37. March 15/16, 2012: A Pitx3 mediated program of dopaminergic subset-specification., Alain Prochianz, Paris, France. International meeting on developmental neuroscience hosted by Alain Prochianz's Institution (Smidt, co-organiser).

38. April 16, 2012: Molecular specification of mdDA neuronal subsets., Antonio Simeone, CNRS, Italy

39. May 3, 2012: Molecular specification of mdDA neuronal subsets., Anders Bjorklund, Annual Neuroscience meeting Lund University, Lund, Sweden

40. May 24, 2013: Molecular specification of mdDA neuronal subsets, invited speaker to session "TRANSCRIPTION FACTORS AS MEDIATORS OF DOPAMINE NEURODEGENERATION IN PARKINSON'S DISEASE" in the meeting "DOPAMINE 2013, Alghero, Italy"

41. November 8-13, 2013: Molecular specification of mdDA neuronal subsets, invited speaker, SFN 2013, San Diego, USA

42. September 20-23, 2016: Genetic programming of dopaminergic subsets, invited speaker, World Parkinson congress 2016, Portland, Oregon, USA.

43. May 13-15, 2019 : Genetic programming of dopaminergic subsets, invited speaker, Interational Dopamine meeting, Krete, Greece.

44. September 24-25, 2020: Involvement of Epigenetic changes in Parkinson's, invited speaker, Accelerating breakthroughs in research and improving care in Parkinson's: Parkinson's UK Research Conference 2020 (online).

5.6 Selection of current and past collaborations with (foreign) academic groups

1. Function of the Engrailed 1 and 2 genes: Dr. Horst H. Simon, University of Heidelberg, Heidelberg, Germany. (Manuscript is published)

2. Analysis of cRet genetically modified mice, Edgar Kramer, Max Planck Institute of Neurobiology, Martinsried, Germany. (Manuscript is published)

3. Serotonin action in the developing CNS, Hans van Hooft, AMC, Amsterdam The Netherlands. (2 Manuscripts Published)

4. Developmental effects of prenatal SSRI exposure, Gerard Visser, Neonatologie, WKZ, Utrecht. The Netherlands (Manuscript published) Until 2011

5. Genetics of Parkinson's Disease, Peter Heutink, VU, Amsterdam, The Netherlands Until 2011

6. FP7 partners in mdDAneurodev project: O. Marin; T. Perlmann, W. Wurst, A. Simeone, W. Driever, A Prochianz and J. Pasterkamp. EU project until 2012
7. Role of Foxd2 in development of mdDA neurons, Tsutomu Kume, Ph.D. Assistant Professor Department of Medicine Vanderbilt University Medical Center 332 PRB, Nashville, TN 37232-6300, USA (Manuscript in preparation)
8. Analysis of the DLK-1 knock out, Y. Wang and H.S. Sul, Department of Nutritional Science and Toxicology, University of California, Berkeley, Berkeley, CA 94720, USA. (Manuscript published)
9. Analysis of connectivity in the Pitx3 ko, Sharon Kolk, PhD, RUN, Nijmegen.
10. Maternal inflammation and mdDA neuronal development, role of epigentics, Gerard O'Keeffe, Department of Anatomy & Neuroscience, Room 1.11, Biosciences Institute, University College Cork, Cork, Ireland.
11. Identification of MiRNAs in mdDA neurons, Gian Carlo Bellinchi, Institute of Genetics and Biophysics,Naples, Italy (Manuscript published 2018).
12. Chip-seq analysis on novel chimeras of Dot1l, Fred van leeuwen, NKI, Amsterdam, The Netherlands
13. Role of H3K79methylation level in neuronal development, Dr L.Trudeau and Dr. W. Kouwenhoven, Montreal, Canada.
14. H3K79methylation kinetics, Dr. F. van Leeuwen, NKI, Amsterdam, The Netherlands

5.7 Selection of management activities

5.7.1 Research management

2001-present:

- Team leader of the Development and function of the mesencephalic dopaminergic system research team (start 2001).
- Member of the organizing committee: Dutch Neurofederation Research Class on Brain Development (2003).
- Chairman: Rudolf Magnus Institute of Neuroscience Summerschool 2003.
- Co-Coordinator of the Section Neurodevelopment of the Rudolf Magnus Institute of Neuroscience.
- Member of organizing committee: Rudolf Magnus Institute of Neuroscience Summerschool 2004.
- Member of the NWO-ALW open program comittee (2006)
- Coordinator of a FP7 EU-grant project (2008-2011), medium sized EU-research project.
- Head of the research platform "Neurodevelopment" (start 2008).
- Coordinator of the Neurodevelopment section of the Rudolf Magnus Institute (start 2008).
- Chairman of the NWO-ALW-VENI committee (2009 and 2010).
- Member of the University Utrecht VICI coachingscommittee 2011.
- Chairman of the ALW-VIDI committee (2011-2014).
- Chairman of the Examination board Bachelor program "Psychobiology" at UvA (2012-2015).
- Director Neurobiology master program cluster UvA (2012-2015).
- Coordinator within the National (dutch)education on Animal Experimentation team (2012-2016).
- Director of the Swammerdam Institute for Life Sciences (SILS, ~ 250 fte), UvA, The Netherlands (2015-2020).
- Chair of a faculty task force towards staffing and finance in the bachelor program Psychobiology (2018).
- Core developer of RPA "Urban Mental Health" UvA, Amsterdam, The Netherlands, (2019)
- Chair of a foundation to stimulate scientific research in the biochemistry domain (Stichting ter bevordering van het wetenchappelijke onderzoek in de biochemie) (2020-current)
- Member of the University of Amsterdam Senate (2021-current).
- Member of the ICT comittee FNWI, UvA (2021-current)

5.7.2 IT management

- Adviser of IT steering group in the medical department, University of Utrecht. (1998-2002)
- Representative of the section molecular neuroscience for IT-support. (1998-2002)
- Interim IT-coordinator Division "Hersenen" of the University Medical Center, Utrecht -until 2005
- Developer/System administer of a Linux server for molecular genetics software -until 2005.
- IT adviser for the department neuroscience and pharmacology, University Medical Center, Utrecht.
- Development and implementation of a new IT infrastructure for the department neuroscience and pharmacology of the University Medical Center, Utrecht -until 2004.
- Manager IT in the department neuroscience and pharmacology, University Medical Center, Utrecht (2004-2011)
- Linux system manager (mainly OpenSuse; 2005-current)

5.7.3 Managment trainings/activities

- Managment training 2 days full time. Academic leadership (2007).
- Personal coaching (every two months one session, 2007-now)
- Interim manager/external adviser of the MT, department of Domestic animals, UU, The Netherlands (2009)
- Communication training 2011 (1 day, buro Beysterveld)

5.7.4 Personal management

- Board member of the Budo School on Martial Arts, De Mattekloppers, University of Groningen (1992-1996)
- Chairman of the Budo school on Martial Arts, De Mattekloppers, University of Groningen (1994-1996)
- Chairman of the MR, Driekoningen school, De Meern, The Netherlands (2008-2012)
- Advisor of the PVDV aqcuisition comittee (2011-2014)

6 Business development

- 2017 Bootcamp course business development at “Ace Venture Labs”, The Netherlands
- Co-founder of “Macrobian-Biotech BV”, a company for pre-clinical drug development.
- CEO of Macrobian Biotech BV.
- Selected for HIHR pitch 2022.

7 Educational experience

- 1989: Assistant to the course: Science and Society.
- 1991-1994: Development and application of the practical course: Biochemistry for Biologist (1 month).
- 1996-2000: Curriculum health-care (UU): Practical Kinetics of Pharmacology
- 1999, 2000: Development and lecturing: "Disease of the central nervous system".
- 2001: Development and lecturing, PhD course Neuroscience; Development and lecturing, KNAW advanced course on Neurogenomics; Development and lecturing: "Disease of the central nervous system"; Development and lecturing: Advanced Course in Neuroscience (PhD course); Lecturing brain development and function of the mesDA system: in PhD course "Neuroscience", University of Amsterdam, Netherlands Brain Institute.
- 2002/2003: Development and lecturing: Advanced Course in Neuroscience.; Development and lecturing: Neuroscience Course. ; Development and lecturing: "Disease of the central nervous system".; Organizer Research Class 2003.; Chairman: Rudolf Magnus Institute of Neuroscience Summerschool 2003.; Development and lecturing: Masters Neuroscience , elected prestigious master.

- 2004: Coordinator : Advanced Course in Neuroscience.; Development and lecturing: Neuroscience Course. ; "Meet the expert" sessions and involved in study material selection for: "Development and developmental disturbances of the Central Nervous System (CNS)".; Member of the organizing committee: Rudolf Magnus Institute of Neuroscience Summerschool 2004.; Development and lecturing: Masters Neuroscience (prestigious master).
- 2001-2011 Advanced neuroscience course for bachelor students; practical and lectures, new practical and additional lectures were developed in 2009.
- 2005-2010 Neuroscience Course: Development and lecturing; Development and developmental disturbances of the Central Nervous System (CNS): Meet the expert" sessions and involved in course development;
- 2005-2010 Prestigious Master Neuroscience: Development, lecturing, practicals and assignment tutor.
- 2006-2010 Visiting professor developmental neuroscience master course, VU, Amsterdam
- 2008 Visiting professor, V International Course on Morphological Interpretation in Neuroembryology, Murcia Spain.
- 2009 Lecturer at the ONWA PhD course, Utrecht, The Netherlands.
- 2010 Lecturer and practicals (IUE) in the PhD course “Developmental Neurobiology”
- 2011 Lecturer/trainer in the RMI summerschool: “Grant writing”.
- 2009-2010: Lecturer at high schools (“Atheneum”, year 6); Dutch Brain week
- 2010-2011: Panel member during information day for the NWO VI grant-program.
- 2012: BKO certification
- 2013- current: Principle developer/lecturer; master program (2 years) “Molecular NeuroSciences (MNS)” UvA
- 2013-current: Lecturer/developer Genetic programming in neurodevelopment (4 weeks) in MNS master course, UvA
- 2012-2018: Lecturer/developer Introduction neurodevelopment (1 week) in Neurobiology track medical biology bachelor, UvA.
- 2012-2022: Lecturer/developer Neurodevelopment and developmental neuropsychology (3 days) psychobiology bachelor year 2 course, UvA
- 2012-current: Lecturer/developer Molecular techniques (1 day), psychobiology third year course, UvA
- 2011-2019: Lecturer/developer Grant writing (1/2 day): Summerschool rudolf magnus institute for neuroscience, UU.
- 2008-2019; Lecturer/developer ONWAR course “Molecular Neurobiology”,VU-NIN.
- 2013-2015: Principle developer of a certified Art9 course according the Dutch law on animal experimentation.
- 2016: SKO certification

8 Selected honors

1. USA National Parkinson Foundation, Richard E. Heikkila Research Scholar Award (award for the best research proposal of 1998).
2. Personal post-doc grant (NWO-MW) (the current Veni award)
3. Rudolf Magnus Institute for Neuroscience Research Award (2000). For innovating research on the development of the mesencephalic dopaminergic system.
4. The Netherlands Brain Foundation (HSN) Award for outstanding research performance (2001).
5. High-potential award, University of Utrecht (2004).
6. Vidi award (eligable for funding), NWO-MW, The Netherlands (2004).
7. Rudolf Magnus Institute for Neuroscience Research Award to Frank Jacobs and Simone Smits (2007). Best publication in 2007: Jacobs FM, Smits SM, Noorlander CW, von Oerthel L, van der Linden AJ, Burbach JP and Smidt MP. Retinoic acid counteracts developmental defects in the substantia nigra caused by Pitx3 deficiency. Development. 2007 Jul;134(14): 2673-84. IF 8
8. Vici award, NWO-ALW, The Netherlands (2009).

9 List of publications, books and patent applications

9.1 Pre-print published manuscripts

1. Iris Wever, Pablo Largo Barrientos, Elisa J. Hoekstra and Marten P. Smidt (2018) Lmx1b influences correct post-mitotic coding of mesodiencephalic dopaminergic neurons. bioRxiv 441915; doi: https://doi.org/10.1101/441915

2. Iris Wever, Cindy M.R.J. Wagemans and Marten P. Smidt (2018) EZH2 is essential for fate determination in the mammalian Isthmic area. bioRxiv 442111; doi: https://doi.org/10.1101/442111

3. Iris Wever, Lars von Oerthel, Cindy M.R.J. Wagemans and Marten P. Smidt (2018) EZH2 influences mdDA neuronal differentiation, maintenance and survival. bioRxiv 442236; doi: https://doi.org/10.1101/442236

4. Simone Mesman, Reinier Bakker, Marten Smidt (2018) Tcf4 encodes cortical differentiation during development Simone Mesman, Reinier Bakker, Marten Smidt bioRxiv 470385; doi: https://doi.org/10.1101/470385

5. Mice hypomorphic for Pitx3 define a minimal dopamine neuron population sufficient for entraining behavior and metabolism to scheduled feeding Lori L. Scarpa, Brad Wanken, Marten Smidt, Ralph E. Mistlberger, Andrew D. Steele bioRxiv 2020.10.23.353193; doi: https://doi.org/10.1101/2020.10.23.353193

6. Neuronal Dot1l is a broad mitochondrial gene-repressor associated with human brain aging via H3K79 hypermethylation H.J Van Heesbeen, L Von Oerthel, P.M De Vries, M.R.J Wagemans, M.P. Smidt bioRxiv 2021.10.11.463907; doi: https://doi.org/10.1101/2021.10.11.463907

9.2 Peer refereed international journals (impact factors (IF) are listed)

- Almost all papers are in the top 25 % of journals (based on mean impact factor, 5 year).

1. Neuronal Dot1l is a broad mitochondrial gene-repressor associated with human brain aging via H3K79 hypermethylation H.J Van Heesbeen, L Von Oerthel, P.M De Vries, M.R.J Wagemans, M.P. Smidt (2023) Int J Mol Sci.24(2):1387. doi: 10.3390/ijms24021387. IF 7

2. Molecular Organization and Patterning of the Medulla Oblongata in Health and Disease (2022) Dina Diek , Marten P Smidt and Simone Mesman. Int. J. Mol. Sci. 2022, 23(16), 9260; https://doi.org/10.3390/ijms23169260 IF 7

3. Correction to: Survival of midbrain dopamine neurons depends on the Bcl2 factor Mcl1 Edward J. Robinson, Sebastian P. Aguiar, Willemieke M. Kouwenhoven, Dorinde S. Starmans, Lars von Oerthel, Marten P. Smidt, and Lars P. van der Heide. Cell Death Discov. 2022; 8: 102. doi: 10.1038/s41420-022-00871-3. IF 8.5

4. Mice hypomorphic for Pitx3 show robust entrainment of circadian behavioral and metabolic rhythms to scheduled feeding (2022), Lori L Scarpa, Brad Wanken, Marten Smidt, Ralph E Mistlberger, Andrew D Steele, Cell Rep . 2022 Jan 11;38(2):109865. doi: 10.1016/j.celrep.2021.109865. IF 8

5. The continued need for animals to advance brain research (2021)Judith R Homberg , Roger A H Adan , Natalia Alenina , Antonis Asiminas, Michael Bader, Tom Beckers, Denovan P Begg, Arjan Blokland , Marilise E Burger , Gertjan van Dijk , Ulrich L M Eisel , Ype Elgersma, Bernhard Englitz, Antonio Fernandez-Ruiz, Carlos P Fitzsimons, Anne-Marie van Dam, Peter Gass , Joanes Grandjean, Robbert Havekes, Marloes J A G Henckens, Christiane Herden, Roelof A Hut, Wendy Jarrett, Kate Jeffrey, Daniela Jezova, Andries Kalsbeek, Maarten Kamermans, Martien J Kas, Nael Nadif Kasri , Amanda J Kiliaan, Sharon M Kolk, Aniko Korosi, S Mechiel Korte, Tamas Kozicz, Steven A Kushner, Kirk Leech, Klaus-Peter Lesch, Heidi Lesscher, Paul J Lucassen, Anita Luthi, Liya Ma, Anne S Mallien, Peter Meerlo, Jorge F Mejias, Frank J Meye, Anna S Mitchell, Joram D Mul, Umberto Olcese, Azahara Oliva González, Jocelien D A Olivier, Massimo Pasqualetti, Cyriel M A Pennartz, Piotr Popik, Jos Prickaerts, Liset M de la Prida, Sidarta Ribeiro, Benno Roozendaal, Janine I Rossato, Ali-Akbar Salari, Regien G Schoemaker, August B Smit, Louk J M J Vanderschuren, Tomonori Takeuchi, Rixt van der Veen, Marten P Smidt, Vladyslav V Vyazovskiy, Maximilian Wiesmann, Corette J Wierenga, Bella Williams, Ingo Willuhn, Markus Wöhr, Monique Wolvekamp, Eddy A van der Zee andLisa Genzel. Neuron. 2021 Aug 4;109(15):2374-2379. doi: 10.1016/j.neuron.2021.07.015. PMID: 34352213. IF 17

6. Tcf4 Is Involved in Subset Specification of Mesodiencephalic Dopaminergic Neurons (2021) Simone Mesman , Iris Wever and Marten P. Smidt. Biomedicines 9(3), 317; https://doi.org/10.3390/biomedicines9030317. IF 5

7. Cue and reward evoked dopamine activity is necessary for maintaining learned Pavlovian associations. (2021) Ruud van Zessen, Jacques Flores, Timon Eekel, Siem van den Reijen, Bart Lodder, Azar Omrani, Marten Smidt, Geoffrey van der Plasse, Geert Ramakers, Garret Stuber, and Roger Adan. J Neurosci. Apr 19;JN-RM-2744-20. doi: 10.1523/JNEUROSCI.2744-20.2021. IF 6

8. ZNF91 deletion in human embryonic stem cells leads to ectopic activation of SVA retrotransposons and up-regulation of KRAB zinc finger gene clusters. (2021) Haring NL, van Bree EJ, Jordaan WS, Roels JRE, Sotomayor GC, Hey TM, White FTG, Galland MD, Smidt MP, Jacobs FMJ. Genome Res. 2021 Mar 15. doi: 10.1101/gr.265348.120. Online ahead of print. PMID: 33722937 IF 9

9. Advancing urban mental health research: from complexity to action (2021) J.M. van der Wal, C.D. van Borkulo, M. Deserno, J. J. F. Breedvelt, M. Lees, C. Lokman, Prof. D. Borsboom, Prof. D. Denys, R. van Holst, Prof. M. Smidt, Prof. K. Stronks, Prof. P.J. Lucassen, Prof. J.C.M. van Weert, Prof. P.M.A. Sloot, Prof. C.L.H. Bockting, & Prof. R.W. Wiers. Lancet Psychiatry https://doi.org/10.1016/S2215-0366(21)00047-X. IF 27

10. Tcf4 encodes cortical differentiation during development. (2020) Simone Mesman, Reinier Bakker, Marten Smidt. MCN Volume 106, July 2020, 103502, https://doi.org/10.1016/j.mcn.2020.103502. IF 4

11. Acquisition of the Midbrain Dopaminergic Neuronal Identity. (2020) Mesman S, Smidt MP. Int J Mol Sci. 2020 Jun 30;21(13):4638. doi: 10.3390/ijms21134638. PMID: 32629812. IF 6

12. MCL1 as a Therapeutic Target in Parkinson's Disease? (2019) Edward J.Robinson, SebastianAguiar, Marten P.Smidt and Lars P.van der Heide. Trends Mol. Med. 25(12):1056-1065. https://doi.org/10.1016/j.molmed.2019.08.009. IF 11

13. Characterization of transgenic mouse models targeting neuromodulatory systems reveals organizational principles of the dorsal raphe. (2019) Daniel Cardozo Pinto, Hongbin Yang, Iskra Pollak Dorocic, Johannes de Jong, Vivian Han, James Peck, Yichen Zhu, Christine Liu, Kevin Beier, Marten P. Smidt, and Stephan Lammel. Nat. Comm. 10:4633; https://doi.org/10.1038/s41467-019-12392. IF 15

14. Lmx1b Influences Correct Post-mitotic Coding of Mesodiencephalic Dopaminergic Neurons. (2019) Iris Wever, Pablo Largo-Barrientos, Elisa J. Hoekstra and Marten P. Smidt, Front. Mol. Neurosci., 14 March 2019 | https://doi.org/10.3389/fnn IF 6

15. EZH2 is essential for fate determination in the mammalian Isthmic area. (2019) Iris Wever, Cindy m. Wagemans and Marten P. Smidt. Front. Mol. Neurosci. | doi: 10.3389/fnmol.2019.00076 IF 6

16. Entanglement of Genetics and Epigenetics in Parkinson's Disease (2019) H. J. van Heesbeen and Marten P. Smidt, Front. Neurosci. | doi: 10.3389/fnins.2019.00277. IF 4

17. EZH2 Influences mdDA Neuronal Differentiation, Maintenance and Survival.(2019) Wever I, von Oerthel L, Wagemans CMRJ, Smidt MP. Front Mol Neurosci. 2019 Jan 17;11:491. doi: 10.3389/fnmol.2018.00491. eCollection 2018. IF 6

18. Survival of midbrain dopamine neurons depends on the Bcl2 factor Mcl1. (2018) Robinson EJ, Aguiar SP, Kouwenhoven WM, Starmans DS, von Oerthel L, Smidt MP, van der Heide LP. Cell Death Discov. 4:107. doi: 10.1038/s41420-018-0125-7. IF 8.5

19. miR-34b/c enhances mesencephalic dopaminergic neuron differentiation by negatively modulating Wnt signaling (2018) Roberto De Gregorio, Salvatore Pulcrano, Claudia De Sanctis, Floriana Volpicelli, Ezia Guatteo, Lars Von Oerthel, Roberta Esposito1, Rosa Maria Piscitelli, Carla Perrone Capano, Valerio Costa1, Dario Greco, Marten Smidt, Umberto di Porzio, Massimiliano Caiazzo, Nicola Biagio Mercuri, Meng Li and Gian Carlo Bellenchi. Stem Cell Reports 1-, 1-14; IP 7.5

20. Mesman S, Krüse SJ, Smidt MP. (2018) Expression analyzes of early factors in midbrain differentiation programs. Gene Expr Patterns. 27:8-15. doi: 10.1016/j.gep.2017.09.001. Epub 2017

21. Simone Mesman and Marten P. Smidt (2017) Tcf12 Is Involved in Early Cell-Fate Determination and Subset Specification of Midbrain Dopamine Neurons. Front. Mol. Neurosci. 10:353. doi: 10.3389/fnmol.2017.00353 IP 6

22. Smidt MP. (2017) Molecular Programming of Mesodiencephalic Dopaminergic Neuronal Subsets. Front Neuroanat. 2017 Jul 19;11:59. doi: 10.3389/fnana.2017.00059.

23. Kouwenhoven WM, von Oerthel L, Smidt MP (2017) Pitx3 and En1 determine the size and molecular programming of the dopaminergic neuronal pool. PLoS One. 12(8):e0182421. doi: 10.1371/journal.pone.0182421 IF 3

24. Miguel A.P. Oliveira, Rudi Balling, Marten P. Smidt, Ronan M.T. Fleming (2017) Embryonic development of selectively vulnerable neurons in Parkinson's disease. Nature Partner Journal (NPJ): Parkinson's Disease, Jun 26;3:21. doi: 10.1038/s41531-017-0022-4. IF 8

25. Mesman S, van Hooft JA and Smidt MP (2017) Mest/Peg1 is essential for the development and maintenance of a SNc neuronal subset. Front. Mol. Neurosci. | doi: 10.3389/fnmol.2016.00166 IP 6

26. Paap RH, Oosterbroek S, Wagemans CM, von Oerthel L, Schellevis RD, Vastenhouw-van der Linden AJ, Groot Koerkamp MJ, Hoekman MF, Smidt MP. (2016) FoxO6 affects Plxna4-mediated neuronal migration during mouse cortical development. Proc Natl Acad Sci U S A vol. 113 no. 45, E7087–E7096 IP 10

27. Willemieke M. Kouwenhoven and Marten P. Smidt. (2016) Commentary: engrailed 1 shapes the dopaminergic and serotonergic landscape through proper Iso maintenance and function J. Neurology & Neuromedicin 1(5), 1-3.

28. Kouwenhoven WM, Veenvliet JV, van Hooft JA, van der Heide LP, Smidt MP Engrailed 1 shapes the dopaminergic and serotonergic landscape through proper isthmic organizer maintenance and function. (2016) Biol Open 5(3):279-88. doi: 10.1242/bio.015032. IP 4

29. van der Heide LP, Wijchers PJ, von Oerthel L, Burbach JP, Hoekman MF, Smidt MP. (2015) FoxK2 is required for cellular proliferation and survival. J Cell Physiol. 230(5):1013-23. doi: 10.1002/jcp.24828. IP 5

30. Veenvliet JV, Smidt MP. (2014) Molecular mechanisms of dopaminergic subset specification: fundamental aspects and clinical perspectives. Cell Mol Life Sci. 71(24):4703-27 2014 Jul 27. [Epub ahead of print] IP 6.

31. Inês Chaves, Gijsbertus T.J. van der Horst, Raymond Schellevis, Romana M. Nijman, Marian Groot Koerkamp, Frank C.P. Holstege, Marten P. Smidt and Marco F.M. Hoekman (2014) FoxO3 in control of the hepatic circadian oscillator via direct regulation of Clock. Current Biology 2;24(11):1248-55. doi: 10.1016/j.cub.2014.04.018. IP 11

32. Simone Mesman, Lars von Oerthel and Marten P. Smidt (2014) Mesodiencephalic dopaminergic neuronal differentiation does not involve GLI2A-mediated SHH-signaling and is under the direct influence of canonical WNT signaling. PLosOne May 27;9(5):e97926. doi: 10.1371/journal.pone.0097926. eCollection 2014. IP 4

33. Marlies Oostland, M. Renate Buijink, Guus M. Teunisse, Lars von Oerthel, Marten P. Smidt, Johannes A. van Hooft.(2014) Distinct Temporal Expression of 5-HT1A and 5-HT2A Receptors on Cerebellar Granule Cells in Mice. Cerebellum 13(4):491-500. doi: 10.1007/s12311-014-0565-4. IP 3.

34. Reinhard Roessler, Sebastien A Smallwood, Jesse V Veenvliet, Petros Pechlivanoglou, Suping Peng1, Koushik Chakrabarty, Marian JA Groot-Koerkamp, R. Jeroen Pasterkamp, Evelyn Wesseling, Gavin Kelsel, Erik Boddeke Marten P Smidt and Sjef Copray. (2014) Detailed analysis of the genetic and epigenetic signature of iPS cell-derived mesodiencephalic dopaminergic neurons. Stem Cell Reports 2(4):520-33. doi: 10.1016/j.stemcr.2014.03.001 (Cell press) IP 7.5

35. Smidt MP, van Hooft JA. Subset specification of central serotonergic neurons. (2013) Front Cell Neurosci. 7:200. Review. IP 5

36. Smits SM, von Oerthel L, Hoekstra EJ, Burbach JPH, Smidt MP (2013) Molecular Marker Differences Relate to Developmental Position and Subsets of Mesodiencephalic Dopaminergic Neurons. PLoS ONE 8(10): e76037. doi:10.1371/journal.pone.0076037 IP 4.5

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38. Jesse V Veenvliet*, Maria TM Alves dos Santos*, Willemieke M Kouwenhoven, Lars von Oerthel, Jamie L Lim, Annemarie JA van der Linden, Marian JA Groot Koerkamp, Frank CP Holstege and Marten P Smidt (2013) En1 and Pitx3 interplay in dopaminergic subset-specification. Development 140, 3373-3384 (2013) doi:10.1242/dev.094565. *shared first authorship IP7

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44. Hoekstra EJ, von Oerthel L, van der Linden AJ, Smidt MP. (2012) Phox2b influences the development of a caudal dopaminergic subset. PLoS One. 2012;7(12):e52118. doi: 10.1371/journal.pone.0052118. Epub 2012 Dec 14. IP 5

45. Elisa J Hoekstra, Lars von Oerthel, Annemarie J A van der Linden, Raymond D Schellevis, Gerard Scheppink, Frank C.P. Holstege, Marian J Groot-Koerkamp, Lars P van der Heide2, Marten P Smidt (2012) Lmx1a is an activator of Rgs4 and Gbr10 and is responsible for the correct specification of rostral and medial mdDA neurons. Eur J Neurosci. 2012 Oct 29. doi: 10.1111/ejn.12022. IP 3.6

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9.3 Patent applications:

- Smidt MP, Burbach JPH European Patent application, Genes with restricted expression/Genes with restricted expression in mesencephalic dopaminergic neurons, Filed 1997.
- P113870EP00 and PCT application: WO 2018/160067 A1. Inventor J.P. van de Heide, Full licensed to Macrobian Biotech BV
- European patent application No. 18192799.7 and PCT, Universiteit van Amsterdam; Inventors: dr. J.P. van de Heide and prof. dr. M.P. Smidt., Full licensed to Macrobian Biotech BV

9.4 Companies

- Macrobian Biotech BV, www.macrobianbiotech.com:

Macrobian-Biotech was founded in May 2017 by Dr. Lars van der Heide and Prof. dr. Marten Smidt. Its primary goal is to perform pre-clinical research that leads to noval treatments for disorders that affect the midbrain dopamine system. The company is currently housed at the Amsterdam Science Park, the heart of academic excellence in the Netherlands.

9.5 Books (chapters)

1. Smidt MP, Burbach, JP (2000) Transcription factors in the development of the mesencephalic dopamine system. In: Molecular genetics of mental disorders Ed: M. Briley&F. Sulser. 269-287.
2. Burbach JP, van Schaick HSA, Lopes da Silva S, Asbreuk CHJ, Smidt MP (1998) Hypothalamic transcription factors and the regulation of the hypothalamo-neurohypophysial system. In: Vasopressin and Oxytocin. Molecular, Cellular and Clinical Advances (Eds. H.H. Zingg, C.W. Bourque and D.G. Bichet), Advances in Experimental Medicine and Biology 449, Plenum Press, New York, pp. 29-37.
3. Development and Engineering of Dopamine Neurons, Series: Advances in Experimental Medicine and Biology , Vol. 651 Pasterkamp, Jeroen R.; Smidt, Marten P.; Burbach, J. Peter H. (Eds.),2009, 143 p. 26 illus., 5 in color., Hardcover,ISBN: 978-1-4419-0321-1
4. Smidt, MP*, Burbach JP (2009) Terminal differentiation of mesodiencephalic dopaminergic neurons: the role of Nurr1 and Pitx3. In "Dopamine development and engineering" (Eds. J. Pasterkamp, M.P. Smidt, J.P.H. Burbach) http://www.eurekah.com/chapter/3937 *corresponding author
5. Smidt MP, Specific vulnerability of substantia nigra compacta neurons. In: BIRTH, LIFE AND DEATH OF DOPAMINERGICNEURONS IN THE SUBSTANTIA NIGRA Eds: Di Giovanni G, Di Matteo V, Esposito E. Journal Neuraltransmission Supplementum, 2009. in press Springer- Verlag, Wien-New York.
6. Smidt, MP, Development of brain monoaminergic systems. In: Neurobiology of Depression Eds: F. Lopez and C. Alamo. Frontiers of Neuroscience, CRC press, 2011.

9.6 Other scientific contributions

1. Smidt MP. Depression and Dopamine. Front. Neurosci. 2009; 3(2): 279. (research highlight).

10 Citation information

- Total cites: 9881 (2566 since 2017)
- H-index: 46 (29 since 2017)
- i10-index 89 (65 since 2017)